

TWO NEW PHOXOCEPHALID GENERA, *FUEGIPHOXUS* AND *PHOXORGIA*, FROM MAGELLANIC SOUTH AMERICA (AMPHIPODA: CRUSTACEA)

J. L. and C. M. Barnard

Abstract.—*Parharpinia fuegiensis* Schellenberg, 1931, from Magellanic South America, is made the type-species of *Fuegiphoxus* a new genus generally in the Brolginae, a dominantly Australian subfamily. *Fuegiphoxus* appears to be a plesiomorph of the Australian *Elpeddo*. Two new Magellanic species are added to *Fuegiphoxus* along with the Antarctic *Pontharpinia uncinata* Chevreux, 1912. *Phoxorgia* is described for *Parharpinia sinuata* K. H. Barnard, 1931, and appears to be plesiomorphic both to the Australia *Parharpinia* and the predominantly North American *Metharpinia*.

Two more new genera of Phoxocephalidae are now extracted from the polytypic *Paraphoxus* Sars, a genus which should be reduced to 2 species (see Barnard and Drummond, 1976, 1978 and J. L. Barnard, 1979, 1980).

We thank Dr. Charlotte Holmquist of the Swedish Museum of Natural History for loaning us Schellenberg's (1931) material for the second time in 25 years. We hope this time will be the last and that the species are now adequately analyzed. We thank Elizabeth B. Harrison, Janice Clark, Irene F. Jewett and Roland H. Brown for their considerable help. Dr. Wim Vader of Tromsø offered valuable advice.

Antecedents for styles and methods of description are found in Barnard and Drummond (1978).

Key to Illustrations

Capital letters refer to appendages and parts of the amphipod; lower case letters to left of capitals refer to specimens cited in legends and Voucher Material; lower case letters to right of capitals or within parts refer to conditions as listed below: **A**, antenna; **B**, buccal complex, lateral view; **D**, dactyl of a pereopod; **E**, epimeron; **F**, accessory flagellum; **G**, gnathopod; **H**, head; **I**, inner plate or ramus; **L**, lacinia mobilis; **M**, mandible; **N**, molar; **O**, outer plate or ramus; **P**, pereopod; **R**, uropod; **S**, maxilliped; **T**, telson; **U**, upper lip; **W**, pleon; **X**, maxilla; **Y**, palp of mandible. **b**, broken; **d**, dorsal; **l**, left; **m**, medial; **p**, apex of peduncle; **r**, right; **s**, setae removed.

Fuegiphoxus, new genus

Diagnosis.—Eyes present. Flagella of antennae 1-2 unreduced in female, article 2 of antenna 1 shortened to ordinary, ventral setae confined apically.

Article 1 of antenna 2 not ensiform, article 3 with 2 setules, facial spines on article 4 in one main row or 2 rows, article 5 ordinary in size. Right mandibular incisor with 3 teeth, molar not triturative, small, pillow-shaped, bearing 2 short and one elongate spines, not bearing patch of pubescence, palpal hump small. Palp of maxilla 1 biarticulate, inner plate with 4 setae. Setation of maxilla 2 ordinary. Inner plate of maxilliped ordinary, apex of palp not strongly protuberant, dactyl elongate, apical nail distinct, medium. Gnathopods small but dissimilar, gnathopod 2 weakly to moderately enlarged, article 5 of gnathopod 1 of ordinary length but on gnathopod 2 very short and almost cryptic, without eusirid attachment, palms oblique, hands of gnathopods 1-2 respectively ovato-rectangular and slightly broadened, poorly setose anteriorly. Article 2 of pereopod 5 of broad form, articles 4-5 of pereopods 5-6 narrow to medium, article 2 not setose posteriorly, pereopod 7 ordinary, article 2 naked ventrally, article 3 ordinary, dactyl normal. Peduncle of uropod 1 normally elongate, without apical spike, without displaced apical spine, only peduncular apices of uropods 1-2 with faint comb, inner ramus of uropod 1 with one row of marginal spines, no rami continuously spinose to apex, inner ramus of uropod 2 ordinary, uropod 3 ordinary, bearing article 2 of outer ramus, carrying 2 medium to long apical setae. Telson ordinary, each lobe with 2 apical spines plus setules on each lobe, without special dorsal and lateral spines or setae. Epimera 1-2 bearing sparse short posterior setae, without midfacial setae above ventral facial ridge, epimeron 3 ordinary, bearing 3 or more long setae. Urosomite 1 without large lateral armament, bearing or lacking one or more midventral crescents or bundles of setae. Urosomite 3 without dorsal hook or process.

Description.—Rostrum fully developed, unconstricted. Pubescence on article 1 of antenna 1 in male present; calceoli on male primary flagellum of antenna 1 present, calceoli on article 5 of male antenna 2 present, flagellum in male with calceoli. Prebuccal parts ordinary. Right lacinia mobilis bifid, subflabellate, article 1 of mandibular palp short to slightly elongate, palp thin, apex of article 3 oblique, article 2 without outer setae. Lower lip bearing cones. Outer plate of maxilla 1 with 10-11 spines, one spine especially thickened. Inner plates of maxillipeds with one main spine, ordinarily setose. Coxae 2-4 without special anterodorsal humps. Posterior spines on article 6 of pereopods 3-4 thick and stiff, midapical spine or seta absent; article 2 of pereopod 7 without facial setae. Peduncle of uropod 1 with dorsolateral spines confined apically (possibly widely spread on *uncinata*), medial spines widely spread. Peduncle of uropod 2 with only one medial spine confined apically, peduncle of uropod 3 lacking extra subapical setae or spines. Telson with ordinary pair of midlateral or dorsal setules on each side.

Etymology.—From “Tierra del Fuego,” modified for euphonic reasons and from “*Phoxocephalus*,” the type-genus of the family. Masculine.

Type-species.—*Parharpinia fuegiensis* Schellenberg, 1931.

Composition.—*Pontharpinia uncinata* Chevreux, 1912; *Fuegiphoxus inutilis*, new species; *F. abjectus*, new species.

Remarks.—*Fuegiphoxus* differs from *Paraphoxus* Sars in the: (1) weak division of the spine rows on article 4 of antenna 2; (2) proximal position of the dorsal notch on article 4 of antenna 2; (3) elongation of the third spine on the mandibular molar; (4) presence of 4 (not 2) setae on the inner plate of maxilla 1; (5) presence of a thick apical spine on the inner plate of the maxilliped; (6) elongate article 5 of gnathopod 1; (7) significantly enlarged gnathopod 2; (8) cryptic article 5 of gnathopod 2; (9) well developed facial setae on articles 4–5 of pereopods 3–4; (10) apical digitation of article 6 on pereopod 7; and (11) lowered flexibility of the apical nail on the rami of uropods 1–2.

Fuegiphoxus differs from *Wildus* Barnard and Drummond in the: (1) clear division of spines into rows on article 4 of antenna 2; (2) slightly longer article 5 of antenna 2; (3) diversity of spine size on the mandibular molar; (4) presence of 4 setae on the inner plate of maxilla 1 and the presence of 11 spines on the outer plate (not 9); (5) presence of the thick spine on the inner plate of the maxilliped; (6) deeper cleft on the inner plates of the maxillipeds; (7) incompleteness of the cryptic condition on the wrist of gnathopod 2; (8) strong facial setation on articles 4–5 of pereopods 3–4; (9) retention of apical digits on article 6 of pereopod 7; (10) presence of ventral setae on epimeron 3; and (11) deeply immersed apical nails on the rami of uropods 1–2. In addition the type-species of *Fuegiphoxus* has more basofacial setae on the peduncle of uropod 1 (also satisfactory in *inutilis* but unknown in *uncinatus*) and the nondisplacement of the apicomedial spine on the peduncle of uropod 1 (unknown in *uncinatus* and see *W. waipiro*, an exception to the *Wildus* pattern). Generally, *Fuegiphoxus* has a more proximal dorsal notch on article 4 of antenna 2 and larger outer plates of the maxillipeds.

Fuegiphoxus resembles *Eyakia* J. L. Barnard in the elongation of one spine on the mandibular molar but differs from *Eyakia* in the: (1) short thick article 2 on antenna 1; (2) additional proximal spine(s) in the formula on article 4 of antenna 2 (but unknown in *uncinata*); (3) absence of pubescence on the molars; (4) presence of only one (not 2) main spine on the inner plate of the maxilliped; (5) distinctly enlarged gnathopod 2; (6) untapered article 2 of pereopod 5; (7) poorly setose epimeron 3; and (8) more immersed apical nails on the rami of uropods 1–2.

Elpeddo Barnard and Drummond (1978) in Australia may be an apomorph of *Fuegiphoxus* because that monotypic genus has a peculiar male antenna 1 like the appendage of *Fuegiphoxus abjectus*. *Elpeddo* differs from *Fuegiphoxus* in the loss of 2 of the 4 setae on the inner plate of maxilla 1, the loss of the main spine on the inner plates of the maxilliped, has developed

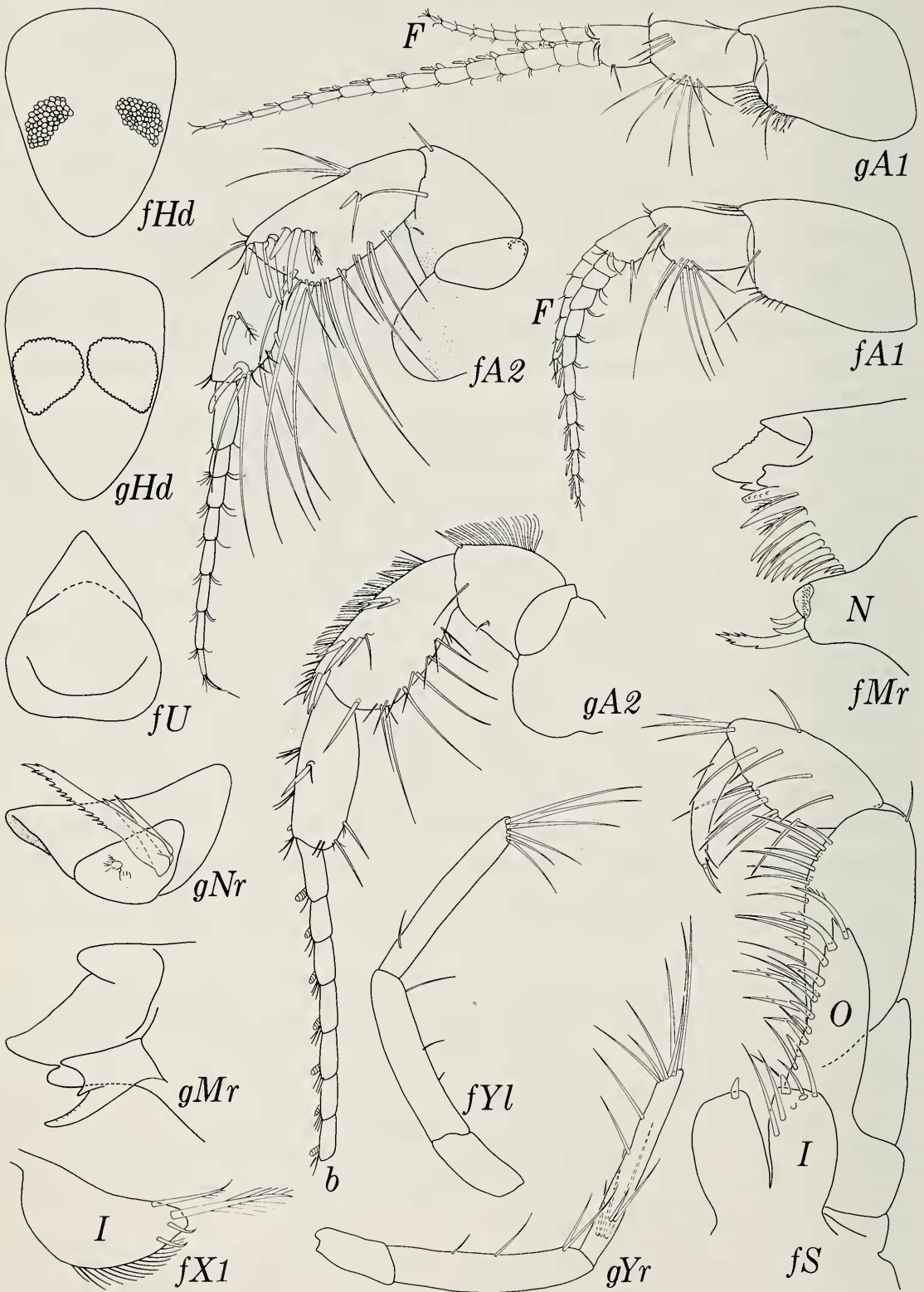


Fig. 1. *Fuegiphoxus fuegiensis*: f = lectotype female "f" 6.44 mm, g = male "g" 7.83 mm.

a displaced spine on the apicomedial margin of the peduncle on uropod 1, has giant calceoli on article 5 of antenna 2 and bears the neotenic or juvenile form of uropod 3 in which article 2 on the outer ramus is elongate.

Key to the Species of *Fuegiphoxus*

1. Epimeron 3 with long thin blunt posterior teeth *F. uncinatus*
Epimeron 3 rounded or broadly quadrate posteriorly 2
- 2a. Epimera 1–2 with small posteroventral tooth, spine formula on article 4 of antenna 2 = 0-4-4-1 *F. inutilus*
- 2b. Epimera 1–2 rounded posteroventrally, spine formula on article 4 of antenna 2 = 0-6-1 *F. fuegiensis*
- 2c. Epimera 1–2 subquadrate posteroventrally, spine formula on article 4 of antenna 2 = 3-3-3-1 *F. abjectus*

Fuegiphoxus fuegiensis (Schellenberg)

Figs. 1–3 (part)

Parharpinia fuegiensis Schellenberg, 1931:78–80, fig. 40.—Stephensen, 1949:5–6.

Paraphoxus fuegiensis.—J. L. Barnard, 1960:271, pl. 42.

Description of lectotype female ‘f.’—Head about 20 percent of total body length, greatest width about 75 percent of length, rostrum uncontracted, broad, short, reaching middle of article 2 on antenna 1; eyes large, clear of pigment, ommatidia ordinary; article 1 of peduncle on antenna 1 almost 1.5 times as long as wide, about twice as wide as article 2, ventral margin with about 12 setules (not all illustrated), produced dorsal apex with 3 setules, article 2 about 0.55 times as long as article 1, with apicoventral cycle of 7–8 setae, primary flagellum with 10 articles, about 0.8 times as long as peduncle, bearing one short aesthetasc on each of articles 4–9, accessory flagellum short, with 7 articles. Spine formula of article 4 on antenna 2 = 3-3-2, dorsal margin with notch bearing 4 setae, ventral margin with 5–6 groups of 1–4 long to medium setae, one ventrodiscal long spine, article 5 about 0.7 times as long as article 4, facial spine formula = 1, dorsal margin bearing one set of small setae, ventral margin with 3 sets of one seta each, 3 ventrodiscal long to medium spines, one of these set subdistally; flagellum about 0.95 times as long as articles 4–5 of peduncle combined, with 8 articles.

Mandibles with weak palpar hump, right incisor with 3 teeth, left incisor with 3 humps in 2 branches, right lacinia mobilis bifid, distal branch much shorter than proximal, flabellate, broad, subbifid, proximal branch simple, blunt, with marginal denticles, left lacinia mobilis with 4 teeth plus one accessory tooth, middle teeth shortened, right rakers 8 plus 2 rudimentaries,

left rakers 5 plus one rudimentary, molars composed of bulbous protrusions, each molar with one long serrate and 2 short spines plus granulated callus, without plume, palp article 1 slightly elongate, article 2 with one medium inner apical seta and 2 other shorter inner setae, article 3 about 1.1 times as long as article 2, oblique apex with 7 and 6 spine-setae, basofacial formula = 1-1 and 0-1. Each outer lobe of lower lip with cone. Inner plate of maxilla 1 large, thin, bearing one long apical pluseta, one shorter apico-medial seta, 2 apicolateral much shorter setae, left outer plate with 10 spines, right outer plate with 11 spines, one thick on each side, palp article 2 with one apical spine, one apicolateral, 3 medial spines, and 4 submarginal setae. Inner plate of maxilla 2 slightly shorter than outer, outer scarcely broader than inner, outer with 5 apicolateral setae, inner with one medial seta. Inner plate of maxilliped with one large thick apical spine, 2 apicofacial setae, 3 medial setae, outer plate with 8 medial spines, one apicolateral seta and cusp, palp article 2 without apicolateral seta, article 2 with one apicolateral seta, medial margin of article 2 weakly setose, article 3 with 4 facial setae, one lateral seta, nail of article 4 medium, with 2 accessory setules.

Coxa 1 not expanded apically, anterior margin weakly convex, main ventral setae of coxae 1-4 = 10-11-11-10, posteriormost seta of coxae 1-4 scarcely shortened, anterior and posterior margins of coxa 4 almost parallel, posterior margin convex, posterodorsal corner rounded, posterodorsal margin V-shaped, width-length ratio of coxa 4 = 6:7. Gnathopods with elongate hands, gnathopod 2 larger than gnathopod 1 and with subcryptic wrist, width ratios on articles 5-6 of gnathopods 1-2 = 30:38 and 32:50, length ratios = 66:88 and 50:88, palmar humps large, palms strongly oblique, article 5 of gnathopod 1 elongate, ovate, posterior margin rounded-flat, article 5 of gnathopod 2 triangular, posterior margin rounded-angular.

Pereopods 3-4 similar to each other, facial setae formula on article 4 = 6 and 5, parallel to apex, on article 5 = 5 and 5, main spine of article 5 extending to M. 90-100 on article 6, article 5 with no proximoposterior spines, spine formula of article 6 = 3 + 2 and 4 + 2 plus no middistal seta, spines especially long, medial spines tightly grouped (and inserted from lateral side, not truly medial), acclivity on inner margin of dactyls of pereopods 3-4 obsolescent, emergent setule short, almost fully immersed, mid-facial pluseta ordinary but highly anterior. Coxae 5-7 posteroventral setule formula = 3-3-4, gills of these coxae large. Articles 4-5 of pereopods 5-6 narrow, facial spine rows sparse, facial ridge formula of article 2 on pereopods 5-7 = 0-1-1, article 2 of pereopod 5 scarcely tapering distally. Width ratios of articles 2, 4, 5, 6 of pereopod 5 = 41:23:18:10, of pereopod 6 = 64:22:15:9, of pereopod 7 = 80:16:13:7, length ratios of pereopod 5 = 69:26:36:37, of pereopod 6 = 88:48:53:55, of pereopod 7 = 100:20:25:30, article 2 of pereopod 7 much broader than in female "d" of Barnard (1960) exceeding middle of article 4, posterior margin with 7 small serrations, one

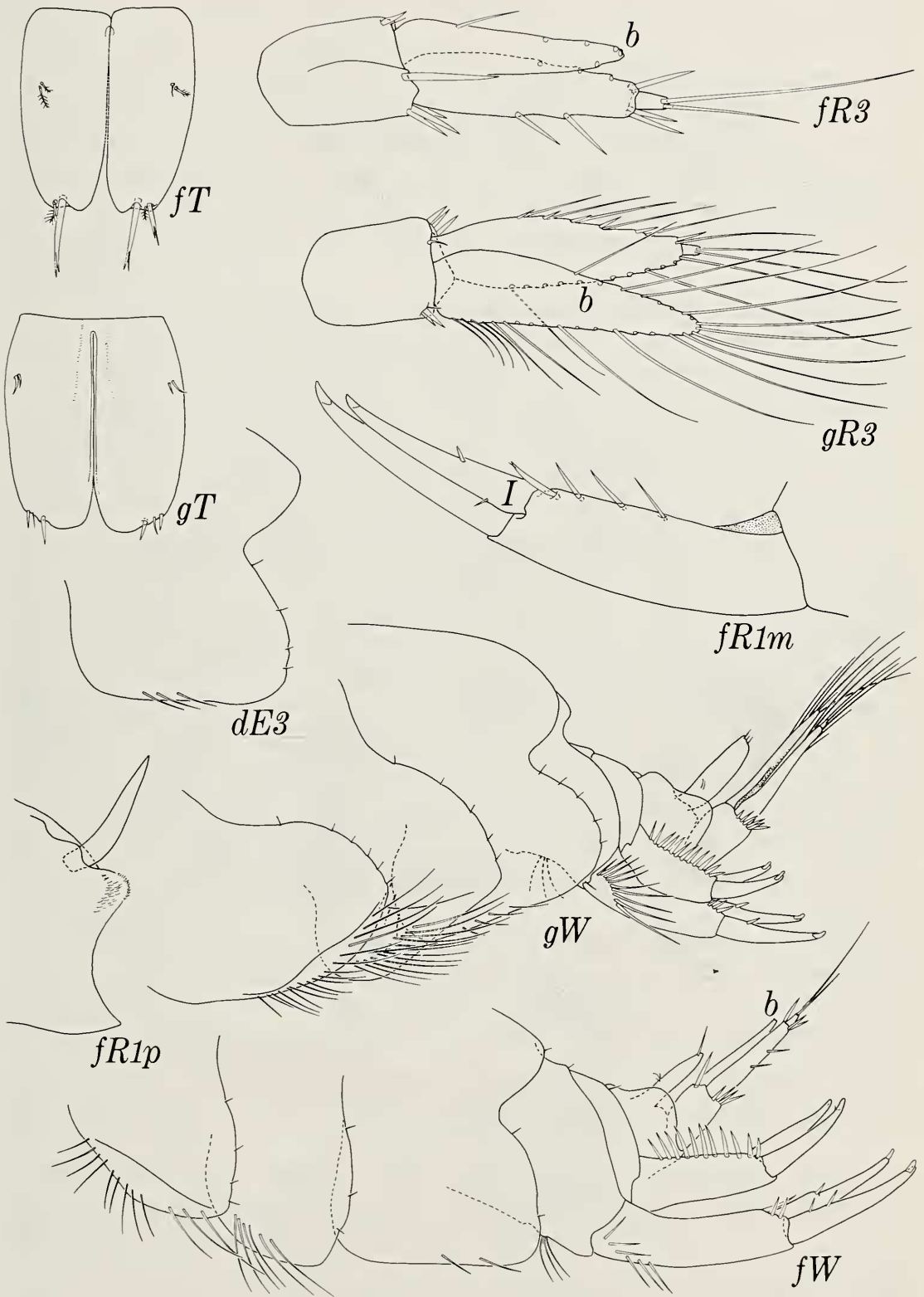


Fig. 2. *Fuegiphoxus fuegiensis*: **d** = female "d" 6.0 mm, **f** = lectotype female "f" 6.44 mm, **g** = male "g" 7.83 mm.

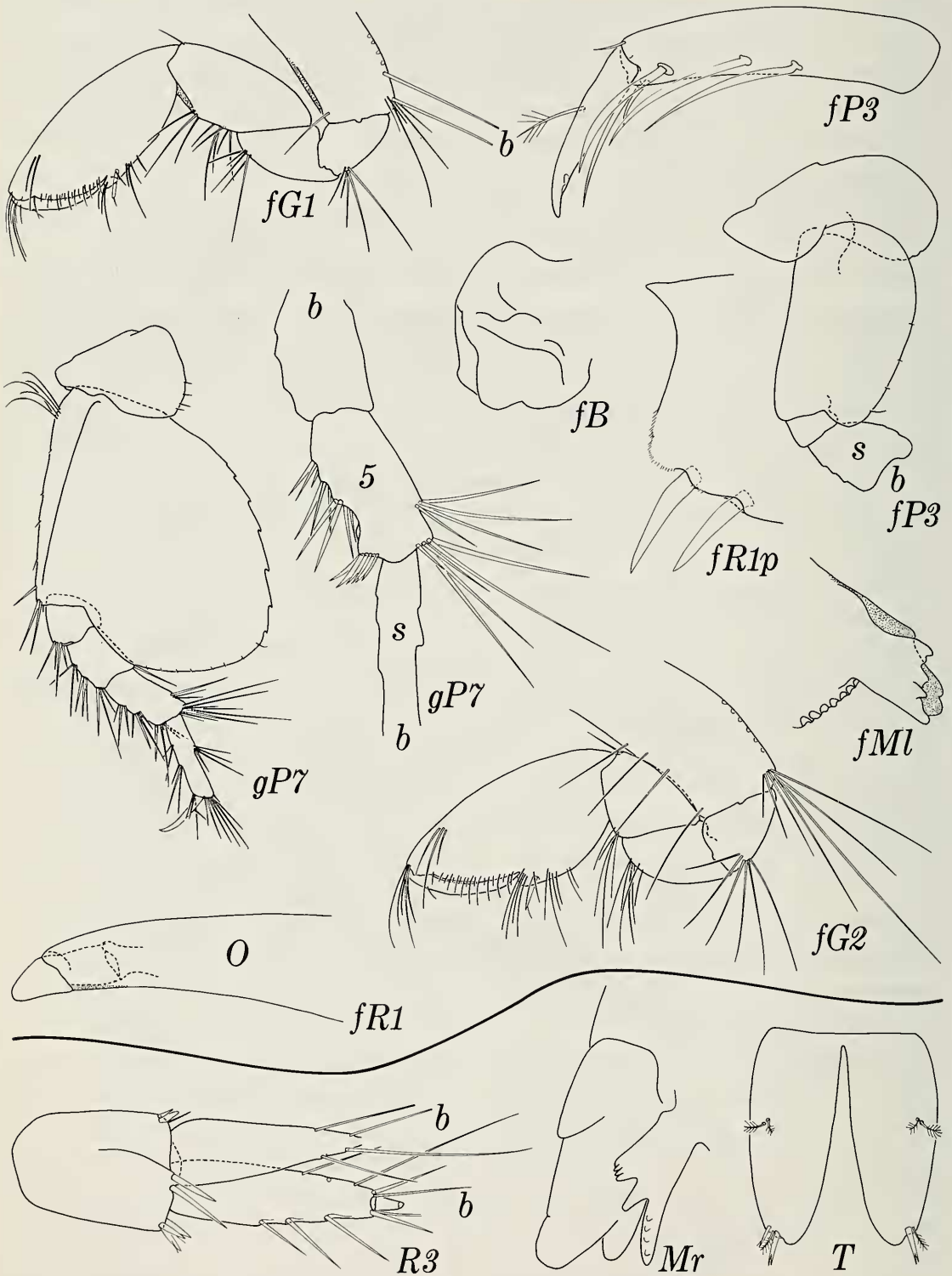


Fig. 3. **Upper**, *Fuegiphoxus fuegiensis*: f = lectotype female "f" 6.44 mm, g = male "g" 7.83 mm. **Lower**, *Fuegiphoxus inutilis*, holotype female "p" 7.80 mm.

elongate posteroventral setule, medial apex of article 6 finely to coarsely combed, bearing 7–8 digital processes.

Posteroventral corner of eipmeron 1 rounded-quadrate, posterior margin almost straight, with 4 setules, anteroventral margin with 9 medium setae, posteroventral margin with 3 long setae. Posteroventral corner of epimeron 2 rounded, posterior margin weakly convex, with 3 setules, facial setae = 6, no lateral ridge. Posteroventral corner of epimeron 3 rounded, posterior margin straight, with 2 setule notches, ventral margin with 2 setae in posterior half.

Urosomite 1 with 2 groups of 2 ventral setae, no lateral setae, articulation line complete, urosomites unprotuberant dorsally. Rami of uropods 1–2 with fused, immersed apical nails, outer ramus of uropod 1 with 1–2 dorsal spines, inner with one, rami of uropod 2 naked, peduncle of uropod 2 with 6 basofacial to ventral setae and 2–3 apicolateral spines, narrowly confined medially, with 4 marginal setae and spines, apicalmost weakly enlarged, but not displaced, plus accessory slit. Peduncle of uropod 2 with 11 dorsal spines, medially with one large apical spine, apicolateral corners of peduncles on uropods 1–2 with faint comb. Peduncle of uropod 3 with 6–7 ventral spines, dorsally with one long lateral spine, one small medial spine and setule, rami submasculine, inner extending to M. 95 on article 1 of outer ramus, apex with 2 setae, medial and lateral margins with 3 and one setae, article 2 of outer ramus short, 0.17, bearing 2 medium to long setae, medial margin of article 1 with 3 setae, lateral margin with 2 acclivities, spine formula = 1-1-2, setal formula = 0. Telson long, length-width ratio = 6:5, almost fully cleft, each apex of medium width, subtruncate, acclivity shallow, bearing short lateral setule, spine next medial longer than setule or with lateral and medial spines separated by setule, midlateral setules diverse, largest setule small.

Description of male "g."—Article 1 of antenna 1 with medial pubescence, article 2 with 9 ventral setae, primary flagellum with 14 articles, one calceolus each on articles 2–10, aesthetasc each on articles 2–11+, 3 aesthetascs on article 1. Facial spine formula on article 4 of antenna 2 = 3-3-3, article 5 with 3 dorsal sets of male setae and one small calceolus, ventrodistal apex with 2 thin short spines, calceolar formula of elongate flagellum = 1,2,3,4,5,6,7,9,11,13 . . . n (broken at 17).

Right mandibular rakers = 7 plus 6 rudimentaries, left = 7 plus 4 rudimentaries. Basofacial setal formula on article 3 of mandibular palp = 2-3 (opposite and offset) and 2 inner setae; left palp formula = 2-2.

Coxa 4 slightly broadened and posterodorsal corner very broadly rounded. Facial and setal spine formulas of pereopods 3–4 on article 4 = 5 + 5, on article 5 = 5 + 6, on article 6 = 4 + 2 and 5 + 2, main spine on article 5 reaching only M. 75 on article 6. Article 2 of pereopod 7 narrower than

in female, article 5 with special form of figure 3gP7, but lacking special male posterior spines found in birubiins.

Epimera 1-2 broadened, posterior margin of epimeron 3 bulbous, setal formulas: epimeron 1 anteroventral = 11, posteroventral = 6 weakly facial, epimeron 2 facial = 12-13, occasional pair vertical, epimeron 3 posterior = 5 setules, facial = 0, ventral = 4. Spine formulas of uropods: uropod 1 peduncle apicolateral = 3, basofacial = 10, uropod 2 peduncle dorsal = 12, dorsal spines on outer ramus of uropod 1 = 1-2, of uropod 2 = 0, inner ramus of uropod 1 = 1, of uropod 2 = 0, ventral spines on peduncle of uropod 3 = 9, spine formula on article 1 of outer ramus = 1-1-1-1-1-1, setal formula = 1-1-1-1-1-1. Telson slightly broadened, distal spines greatly shortened, each lobe with short basodorsal row of denticles.

Juvenile "j."—Recognizable as member of this species but epimeron 3 lacking ventral setae, rami of uropod 1 lacking dorsal spines, eye very small, inner ramus of uropod 3 reaching M. 55 on article 1 of outer ramus, only seta present fully apical.

Lectotype.—Female "f" 6.44 mm, Swedish Museum of Natural History 6632.

Type-locality.—Hope Harbor, 30 April 1896, 6-10 fd (fathoms).

Material.—Type-locality, female "d" 6.0 mm (old length not remeasured), male "g" 7.83 mm and one other specimen. Swedish Museum of Natural History 3637, South Georgia, Boiler Bay (Kochtopfbucht), 54°22' S, 36°28' W, stones and algae, juvenile "j" 2.96 mm and one adult; 3633, Puerto Madryn, 2-5 fms, 9 November 1895 (1); 3634, Puerto Condor, 50 fms, 26 February 1896 (2 small); 3635, Punta Arenas, "Ebbestrand," 1 December 1895 (2).

Remarks.—As the type-species of the genus, *fuegiensis* forms the model; and comparisons can therefore be made through the key or in remarks of following species.

Distribution.—Magellanic-Fuegian Archipelago, 0-91 m; South Georgia, 0-311 m; Tristan da Cunha, surface (corrected summary from Barnard, 1960).

Fuegiphoxus inutilis, new species

Figs. 3, 4 (part)

Parharpinia fuegiensis Schellenberg, 1931:78 (in part, see text here).

Paraphoxus fuegiensis.—J. L. Barnard, 1960:pl. 42, figs. S, T (not most of Schellenberg, 1931).

Description of female holotype "p."—Head about 18 percent of total body length, greatest width about 80 percent of length, rostrum uncontracted, broad, short, reaching middle of article 2 on antenna 1. Eyes medium, clear of pigment, ommatidia ordinary. Article 1 of peduncle on antenna 1

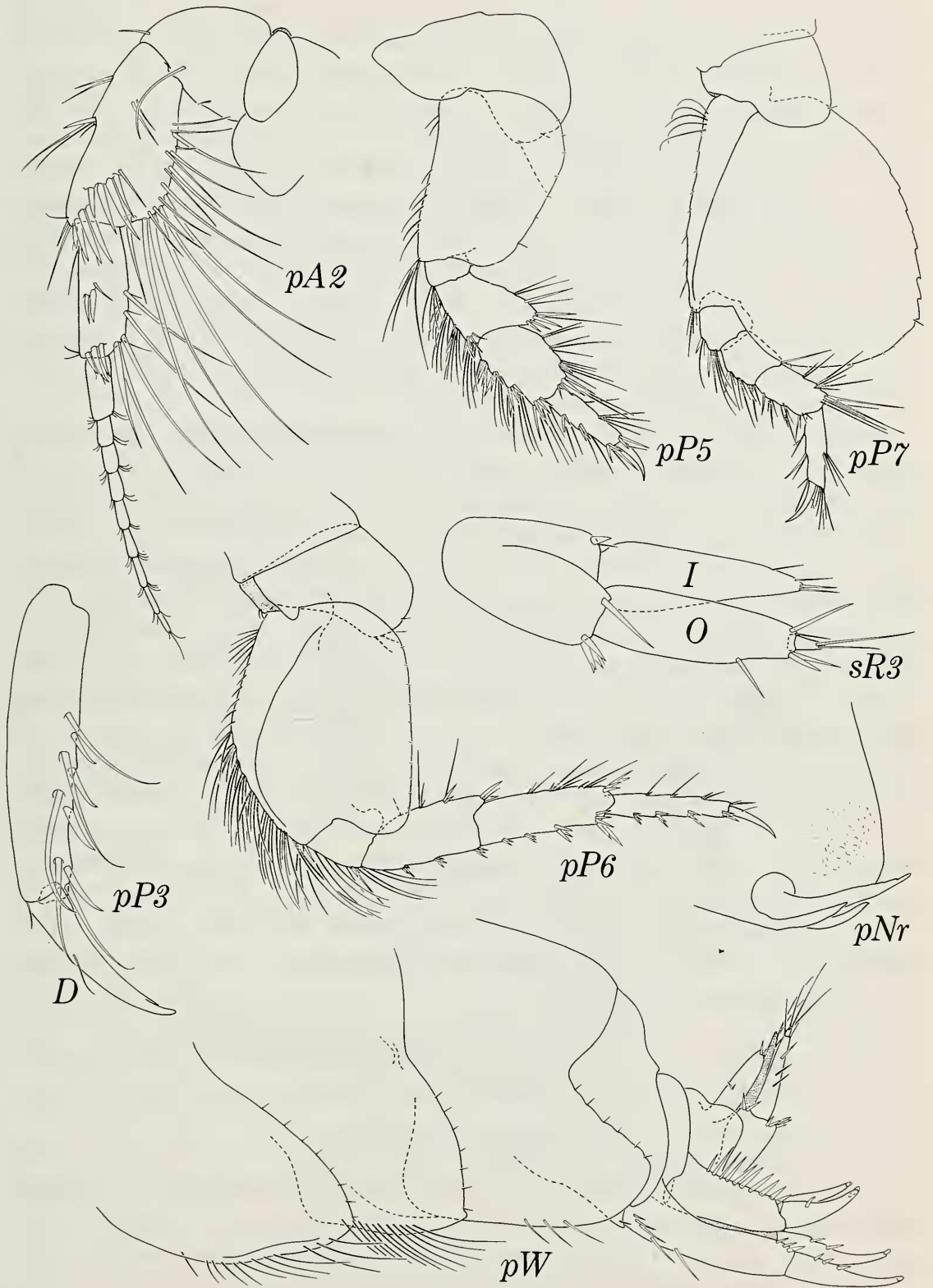


Fig. 4. *Fuegiphoxus inutilis*: p = holotype female "p" 7.80 mm; s = young male "s" 6.51 mm.

about 1.3 times as long as wide, about 2.3 times as wide as article 2, ventral margin with about 4 setules, produced dorsal apex with 3 setules, article 2 about 0.47 times as long as article 1, with apicoventral cycle of 9 setae, primary flagellum with 10 articles, about 0.9 times as long as peduncle, bearing one each short aesthetasc on articles 1-9, accessory flagellum short, with 6 articles. Antenna 2 not ensiform, spine formula of article 4 = 4-4-1, dorsal margin with 2 notches bearing 2 setae and 3 setae and one spine, ventral margin with 7 groups of 2-3 long to medium setae, one ventrodistal long spine, article 5 about 0.72 times as long as article 4, facial spine formula = 3-2, dorsal margin bearing one set of small setae, ventral margin with 5 sets of one each long setae plus setules, 3 ventrodistal long to medium spines counted in facial formula above; flagellum about as long as articles 4-5 of peduncle combined, with 9 articles.

Epistome unproduced. Mandibles with weak palpar hump, right incisor with 3 teeth, left incisor with 3 humps in 2 branches, right lacinia mobilis bifid (trifid), distal branch much shorter than proximal, broad, subbifid, distal subbifidation denticulate, proximal branch simple, pointed, with marginal denticles, left lacinia mobilis with 4 deep teeth, middle teeth not shortened, right rakers 6 plus one rudimentary, left rakers 7 plus 1-2 rudimentaries, molars composed of bulbous protrusions, each molar with one weakly serrate medium spine and 2 short spines, molars without plumes, palp article 1 greatly elongate, article 2 with 2 long to medium inner apical setae and 2 other shorter inner setae, article 3 about 1.2 times as long as article 2, oblique apex with 7 and 6 spine-setae, basofacial formula = 1-1. Each outer lobe of lower lip with one cone. Inner plate of maxilla 1 large, broad, bearing one long apical pluseta, one similar apicomedial seta, 2 apicolateral much shorter setae, outer plate with 11 spines, palp article 2 with one thin apical spine, 1-2 apicolateral, 5 medial and 4 submarginal setae. Inner plate of maxilla 2 shorter than outer, outer not broader than inner, outer with 5 lateral setae, inner with one medial seta. Inner plate of maxilliped with one large thick apical spine, 2 apicofacial setae, 4 medial setae, outer plate with 11 medial spines, 2 apicolateral setae and cusp, palp article 1 without apicolateral seta, article 2 with one group of 2 apicolateral setae, medial margin of article 2 moderately setose, article 3 with 7 facial setae, 2 lateral setae, nail of article 4 short, with 2 accessory setules.

Coxa 1 scarcely expanded apically, anterior margin convex, main ventral setae of coxae 1-4 = 13-13-14-17, posteriormost seta of coxae 1-3 slightly shortened, anterior and posterior margins of coxa 4 parallel, posterior margin convex, posterodorsal corner rounded, posterodorsal margin short, V-shaped, width-length ratio = 7:8. Gnathopods with elongate hands, gnathopod 2 larger than gnathopod 1 and with subcryptic wrist, width ratios on articles 5-6 of gnathopods 1-2 = 30:40 and 33:50, length ratios = 65:87 and 50:90, palmar humps ordinary, palms strongly oblique, article 5 of

gnathopod 1 elongate, ovate, posterior margin rounded-flat, article 5 of gnathopod 2 triangular, posterior margin rounded, angular.

Pereopods 3–4 similar to each other, facial setae formula on article 4 = 5 and 5, parallel to apex, on article 5 = 5 and 6, main spine of article 5 extending to M. 80-70 on article 6, article 5 with no proximoposterior spines, spine formula of article 6 = 4 + 5 and 4 + 5 plus no middistal seta, spines especially long, medial spines inserted from lateral side; acclivity on inner margin of dactyls of pereopods 3–4 obsolescent, emergent setule fully immersed, midfacial pluseta ordinary but highly anteriad. Coxae 5–7 posteroventral setule formula = 2-4-1. Articles 4–5 of pereopods 5–6 narrow, facial spine rows sparse, facial ridge formula of article 2 on pereopods 5–7 = 0-1-1; article 2 of pereopod 5 tapering apically. Width ratios of articles 2, 4, 5, 6 of pereopod 5 = 46:24:21:8, of pereopod 6 = 64:20:15:9, of pereopod 7 = 83:15:13:8, length ratios of pereopod 5 = 65:27:30:31, of pereopod 6 = 88:42:49:44, of pereopod 7 = 100:18:23:29, article 2 of pereopod 7 exceeding middle of article 4, posterior margin with 9–10 small serrations, one scarcely elongate posteroventral setule, medial apex of article 6 coarsely combed, bearing 7–8 digital processes.

Posteroventral corner of epimeron 1 weakly toothed, posterior margin convex, setulose, corner with setule, anteroventral margin with 8–9 long to medium setae, posteroventral margin with 3 long setae. Posteroventral corner of epimeron 2 with small sharp tooth guarded by setule sinus, posterior margin convex, setulose, facial setae = 11, none set vertically. Posteroventral corner of epimeron 3 rounded, protuberant, with setule sinus, posterior margin oblique, weakly concave, setulose, ventral margin with 3 setae near middle.

Urosomite 1 with lateral setule at base of uropod 1, no ventral setae, articulation line complete, urosomites scarcely protuberant dorsally. Rami of uropods 1–2 with fused and immersed apical nails, outer ramus of uropod 1 with 3 dorsal spines, inner with 2, outer ramus of uropod 2 with one dorsal spine, inner with no dorsomedial spines, peduncle of uropod 1 with 5 basofacial setae and 3 apicolateral narrowly confined spines, medially with 5–6 marginal spines, apicalmost weakly enlarged but not displaced, no accessory slit. Peduncle of uropod 2 with 10 dorsal spines, medially with one small apical spine, apicolateral corners of peduncles on uropods 1–2 with obsolescent comb. Peduncle of uropod 3 with 6 ventral spines, dorsally with 2 long lateral spines, one short hooked medial spine and 2 setules or spinule, rami submasculine, inner extending to M. 100 on article 1 of outer ramus, apex with [unknown] setae, medial and lateral margins with 2 and 2 setae, article 2 of outer ramus short, 0.15, bearing 2 ?long setae [broken], medial margin of article 1 with 5 setae, lateral margin with 3 or 1 acclivities, spine formula = 1-1-1-1 or 1-2, setal formula = 0-0-0-1 or 0-1 (variable on 2 sides). Telson long, length-width ratio = 13:11, almost fully cleft, each apex nar-

row, rounded, lateral acclivity broad, shallow, bearing short lateral setule, spine next medial longer than setule or with lateral and medial spines separated by setule (variable), midlateral setules diverse, largest of small size.

Female "s."—Eyes about as large as in *fuegiensis*.

Male "r."—Too young to differentiate from female.

Juvenile "t."—Spine formula on article 4 of antenna 2 = 0-3-3-0, on article 5 = 3 apicofacial spines. Formula on article 6 of pereopods 3-4 = 2 + 3 + 0. Epimera 1-2 with posteroventral tooth, epimeron 3 like adult but with only one ventral seta. Inner ramus of uropod 1 lacking spine, both rami of uropod 2 lacking spines.

Holotype.—Female "p" 7.80 mm, Swedish Museum of Natural History 3638.

Type-locality.—South Georgia, mouth of Cumberland Bay, 54°11'S, 36°18'W, 252-310 m, N:o 34 5/6 1902, gray clay with small (few) ("wenigen") stones, bottom temperature +1.45° [C?] [translated from label written in German, see Schellenberg, 1931:78 as *Parharpinia fuegiensis* quoted as 250-310 m and "einigen Steinen"].

Material.—Swedish Museum of Natural History 3636, South Georgia, outer half of May-Bay, 75 m, 54°17'S, 36°28'W, N:o 22, 14/5 1902, clay, also some algae, bottom temperature +1.5° [C?] [translated from label written in German, see Schellenberg, 1931:78 as *Parharpinia fuegiensis* quoted as "Grytviken"], female "r" 6.21 mm, young male "s" 6.51 mm, juvenile "t" 3.71 mm.

Illustrations: Parts not illustrated generally like those of *P. fuegiensis* herein and in J. L. Barnard (1960:pl. 42); uropod 3 of female "s" added to illustrations here to better show apex broken in the holotype.

Remarks.—The juvenile "t" is needed to confirm the validity of this species because the material was originally determined as *fuegiensis* by Schellenberg (1931) and again by Barnard (1960). This species differs from *F. fuegiensis*, the type-species, in the following characters: (1) Eyes of the female are only medium in size; (2) article 5 of antenna 2 has 3 apicofacial thick spines instead of one; (3) article 6 of pereopods 3-4 has more spines; (4) the epimera are broader, epimera 1-2 have a posteroventral tooth, and epimeron 3 is protrusive; (5) urosomite 1 lacks ventral setae; (6) the pleosome is larger and the urosome smaller; (7) outer ramus of uropod 3 bears a dorsal spine; (8) uropod 3 is shorter.

Distribution.—South Georgia, 75-250 m (confirmed minimum range).

Fuegiphoxus abjectus, new species

Figs. 5, 6

Description of holotype "h" male.—Head about 18 percent of total body length, greatest width about 75 percent of length, rostrum unstricted,

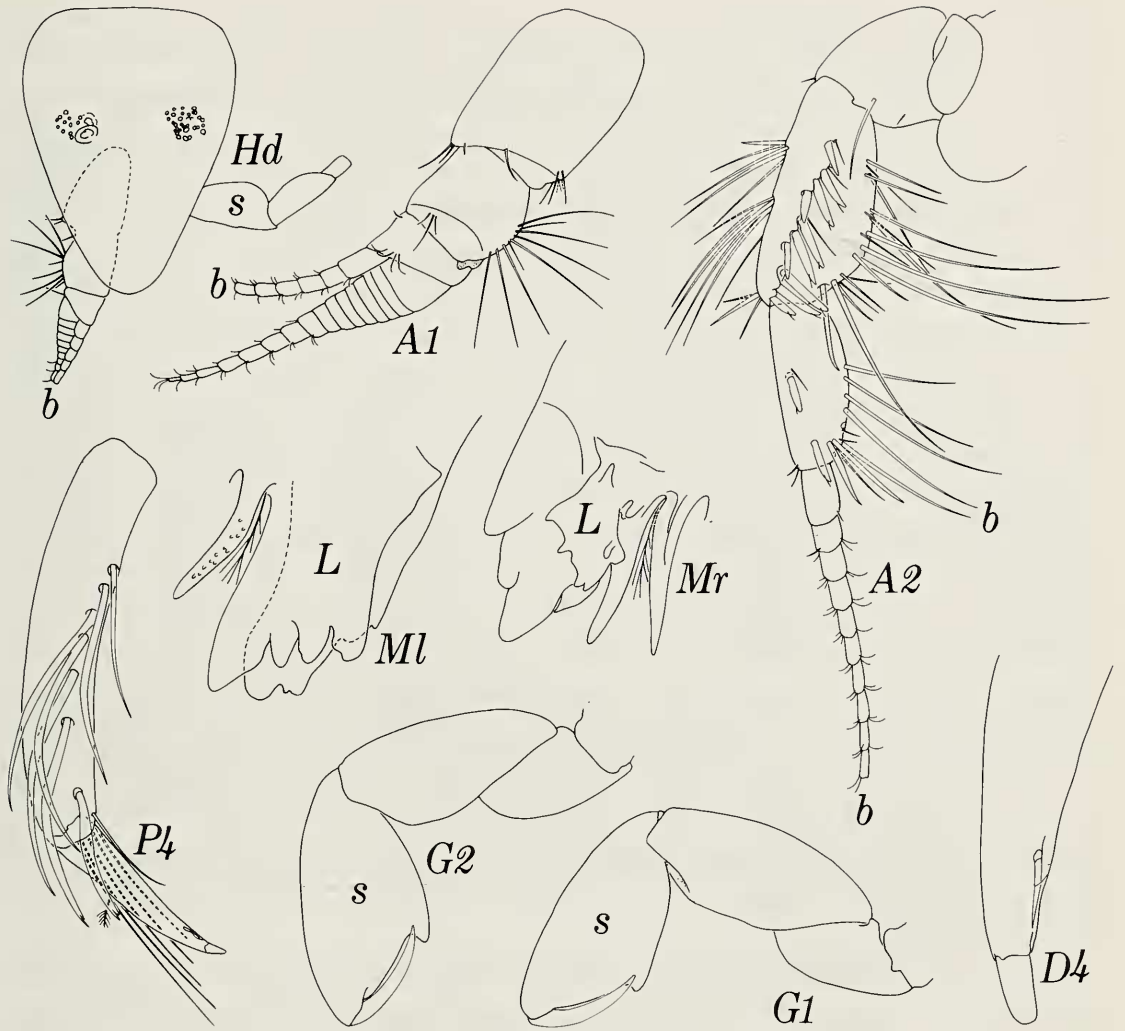


Fig. 5. *Fuegiphoxus abjectus*: holotype male "h" 10.55 mm.

broad, of ordinary length, tapering evenly, reaching apex of article 2 on antenna 1. Eyes small or absent or diffuse. Article 1 of peduncle on antenna 1 about 1.4 times as long as wide, about 1.3 times as wide as article 2, ventral margin with about 6 setules, weakly produced dorsal apex with 2–3 setules, article 2 about 0.55 times as long as article 1, with ventral row of 9 setae (broken), primary flagellum with 16 articles, about 0.8 times as long as peduncle, bearing one each tiny aesthetasc on articles 7–15, basal third of flagellum swollen, no medial fuzz on antenna 1, accessory flagellum with ? articles [broken]. Antenna 2 not ensiform; spine formula of article 4 = 3-3-3-1, dorsal margin with 2 notches bearing 6 and 4 (distal to proximal) setae and one spine (proximal), ventral margin with 8 groups of 1–3 long to short setae, one ventrodistal long spine, article 5 about 0.75 times as long as article 4, facial spine formula = 1, dorsal margin bearing one set of small

distal setae, ventral margin with 6 sets of one long seta each, 3 ventrodorsal short to medium spines, one of these strongly facial, flagellum [broken after article 10]. Epistome not produced. Mandibles with weak palpar hump, right incisor with 4 teeth!, left incisor with mainly 3 humps in 2 branches, right lacinia mobilis bifid, distal branch much shorter than proximal, flabellate, denticulate, proximal branch simple, pointed, left lacinia mobilis with 4 teeth, middle teeth slightly shortened, right rakers 9 plus 3 rudimentaries, left rakers 10 plus 2 rudimentaries, molars composed of bulbous protrusions, each with one very long serrate and 2 medium spines, molar without plume, palp thin but very elongate, article 1 short, article 2 with 1 long to medium inner apical seta and 2 other short inner setae, article 3 about 1.3 times as long as article 2, oblique apex with 9 thin spine-setae, basofacial formula = 0-2. Each outer lobe of lower lip with one cone. Inner plate of maxilla 1 especially large, thin apically, broad basally, bearing one medium subapical pluseta, one longer similar facial seta, 2 apicolateral much shorter setae, outer plate with 11 spines, palp article 2 with 2 apical, 4 medial spines and 5 submarginal setae. Plates of maxilla 2 extending subequally, outer scarcely broader than inner, outer with 4 apicolateral setae, inner with one medial seta. Inner plate of maxilliped with one large thick apical spine, 3 apicofacial setae, 4 medial setae, outer plate with 11 medial spines, 2 apicolateral setae and 2 cusps, palp article 1 with one apicolateral seta, article 2 with one group of 3 apicolateral setae, medial margin of article 2 moderately setose, article 3 with 4 facial setae, 2 lateral setae, nail of article 4 medium, with 2 accessory setules.

Coxa 1 not expanded apically, anterior margin weakly convex, main ventral setae of coxae 1-4 = 17-12-12-14, only posteriormost seta of coxa 1 strongly shortened, anterior and posterior margins of coxa 4 slightly divergent, posterior margin convex, posterodorsal corner rounded, posterodorsal margin ordinary, concave, width-length ratio = 5:6. Gnathopods generally ordinary, gnathopod 2 scarcely longer than gnathopod 1, width ratios on articles 5-6 of gnathopods 1-2 = 27:32 and 27:34, length ratios = 65:61 and 61:62, palmar humps ordinary, palms strongly oblique, article 5 of gnathopod 1 elongate, ovate, posterior margin rounded-flat long, article 5 of gnathopod 2 elongate, ovate, posterior margin rounded.

Pereopod 4 slightly stouter than pereopod 3 especially on article 4, facial setae formula on article 4 = 8 and 6, parallel to apex, on article 5 = 9 and 8, main spine of article 5 extending to M. 100-90 on article 6, article 5 with no proximoposterior spines, spine formula of article 6 = 6 + 5 and 7 + 6 but no middistal seta, medial members = clump of thin apical setae, spines especially long, acclivity on inner margin of dactyls of pereopods 3-4 represented by slit, emergent setule short, midfacial pluseta anterior, short. Coxae 5-7 posteroventral seta formula = 6-5-1. Articles 4-5 of pereopods 5-6 narrow, facial spine rows sparse, facial ridge formula of article 2 on

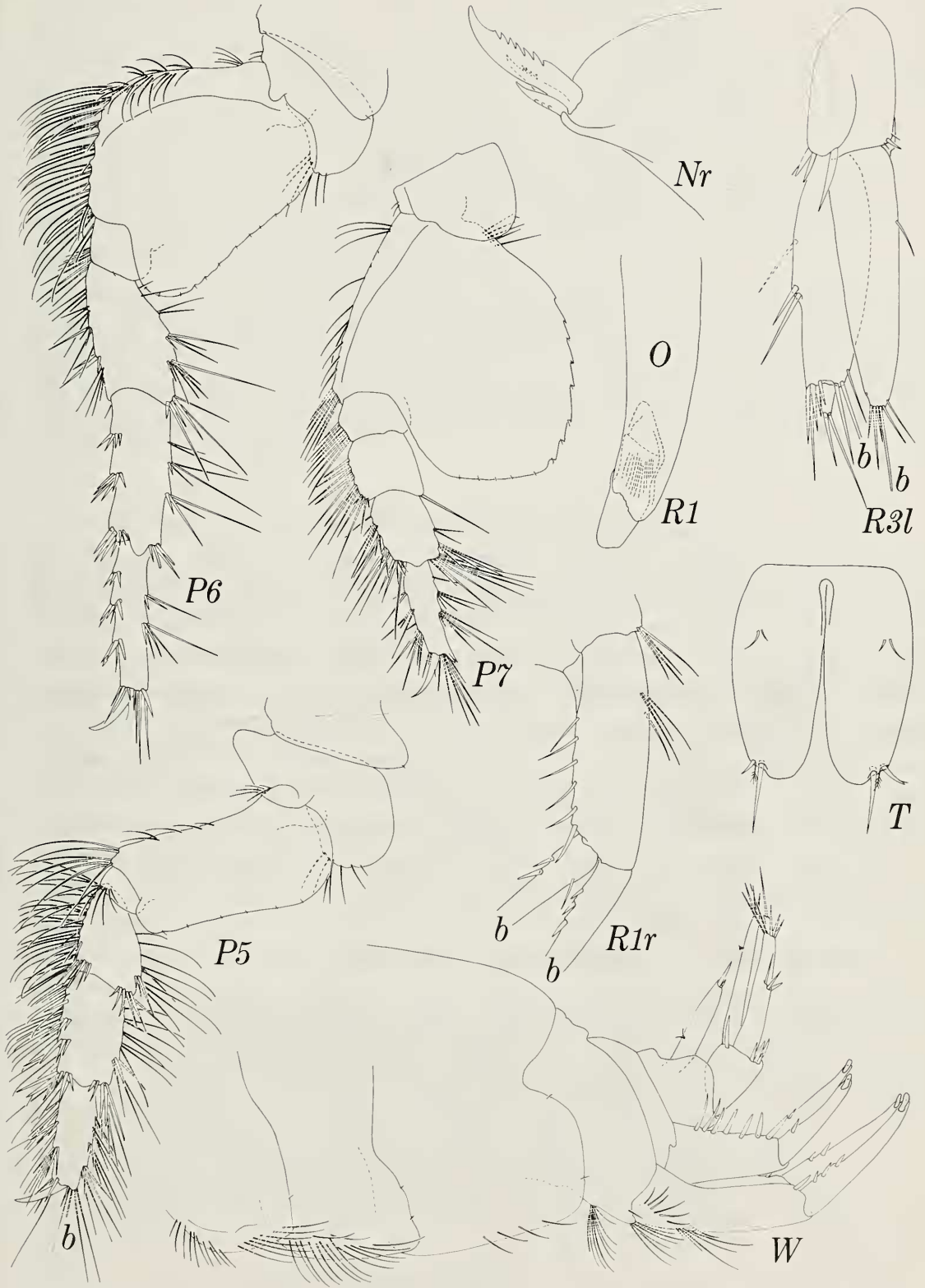


Fig. 6. *Fuegiphoxus abjectus*: holotype male "h" 10.55 mm; dotted spine on R3 shown for same member on right side of animal.

pereopods 5–7 = 0-1-1. Width ratios of articles 2, 4, 5, 6 of pereopod 5 = 40:25:25:15, of pereopod 6 = 72:29:23:14, of pereopod 7 = 90:23:20:12, length ratios of pereopod 5 = 78:32:42:41, of pereopod 6 = 95:48:60:58, of pereopod 7 = 100:26:28:39, article 2 of pereopod 7 exceeding middle of article 4, posterior margin with 7 medium serrations and several long posterodorsal setae (very unusual), setae of articles 3–4 very thick and stiff, medial apex of article 6 scarcely combed, bearing 9 digital processes.

Posteroventral corner of epimeron 1 quadrate, posterior margin straight, with setule, anteroventral margin with 10 medium setae, posteroventral face with horizontal row of 7 long setae. Posteroventral corner of epimeron 2 rounded-quadrate and weakly protuberant, posterior margin weakly convex, with 2 setules, facial setae = 15, occasionally middle pairs set vertically. Posteroventral corner of epimeron 3 rounded, overall protuberant but posterior margin weakly convex, with 2 setule notches, ventral margin with 4 setae mainly in posterior half.

Urosomite 1 with lateral setule at base of uropod 1, brush of setae ventral to uropod 1 and brush of midventral setae, articulation line complete, urosomites unprotuberant dorsally. Rami of uropods 1–2 with articulate but tightly fixed apical nails, outer ramus of uropod 1 with 3 dorsal spines, inner with 2, outer ramus of uropod 2 with one dorsal spine, inner with one dorsomedial spine, peduncle of uropod 1 with 7 basofacial and ventral cluster of 5 setae, one apicolateral spine, medially with 6 marginal setae and spines, apicalmost enlarged but not displaced. Peduncle of uropod 2 with 7–8 dorsal spines, basalmost thin and elongate, medially with one medium apical spine, apicolateral corners of peduncles on uropods 1–2 with very weak comb. Peduncle of uropod 3 with 6 ventral spines, dorsally with one lateral spine, one medial spine and 2 setules, rami submasculine, inner extending to M. 100+ on article 1 of outer ramus, apex with 4 setae, medial and lateral margins with 2 and one setae, article 2 of outer ramus short, 0.16, bearing 2 short to medium setae, apicomedial margin of article 1 with 3 setae, lateral margin with 1–2 acclivities, spine formula = 0-2-5 or 0-4-4, setal formula = 0-0-1 or 1-0-1. Telson long, length-width ratio = 33:28, almost fully cleft, each apex of medium width, rounded, lateral acclivity broad, shallow, with short lateral and long medial spines separated by short setule, midlateral setules diverse, largest of small size, denticles absent.

Notes.—Male unusual: antenna 2 not elongate, uropod 3 not fully developed, denticles on telson absent; therefore male possibly youthful.

Holotype.—Swedish Museum of Natural History 3631, male “h” 10.55 mm. Unique.

Type-locality.—Bahia Inutil, 23 January 1896, 20–30 fd.

Remarks.—This specimen was formerly called *Parharpinia fuegiensis* by Schellenberg, then *Paraphoxus fuegiensis* by J. L. Barnard (1960) and was

considered to be a female but now is thought to be a male of character similar to that of *Elpeddo kaikai* Barnard and Drummond (1978:119).

The remarkable antenna 1 of this unique male links *Fuegiphoxus* with the Australian *Elpeddo* as noted in remarks after the description of *Fuegiphoxus* above. In fact, *abjectus* has more strong characters of difference from its sympatriots *fuegiensis* and *inutilus* in South America than from *Elpeddo* but the characters noted earlier in this paper seem to be more important to distinguish genera than to invoke distinctions simply by counting the number of unevaluated differences among taxa.

Fuegiphoxus abjectus differs from both *F. inutilus* and *F. fuegiensis* in: (1) the formula, spacing and thickness of the spines on article 4 of antenna 2; (2) the odd male antenna 1; (3) the short article 1 of the mandibular palp; (4) the scarcely enlarged gnathopod 2; (5) the odd setal clump on article 6 of pereopods 3–4; (6) the shape of epimeron 3; and (7) the setal brush on the apex of urosomite 1.

Fuegiphoxus? uncinatus (Chevreux)

Pontharpinia uncinata Chevreux, 1912:4; 1913:100–104, figs. 10–12.

Paraphoxus uncinatus.—J. L. Barnard, 1960:283.

This species is provisionally assigned to *Fuegiphoxus* but many characters need confirmation, for example: spine formulas on antenna 2, laciniae mobiles, mandibular palp, maxillipedal spine counts and dactyl formations, setal formulas of epimera 1–2 and urosomite 1, spine formulas on apices of rami on uropods 1–2, and medial margins of peduncles.

For the moment, the species is distinguished from others in its genus by the long thin posteroventral tooth of epimeron 3.

Distribution.—Antarctica, Port Lockroy, Chenal de Roosen, 60–70 m.

Phoxorgia, new genus

Diagnosis.—Eyes present. Flagella of antennae 1–2 unreduced in female, article 2 of antenna 1 shortened, ventral setae confined apically; article 1 of antenna 2 not ensiform, article 3 with 3 lateral setae, facial spines on article 4 in 2 or more rows, article 5 ordinary in size. Right mandibular incisor with 3 teeth, molar not triturative, small, pillow shaped, bearing 4 or more splayed spines, bearing pubescence, palpar hump moderate. Palp of maxilla 1 biarticulate, inner plate with 4 setae; setation of maxilla 2 ordinary. Inner plate of maxilliped ordinary, apex of palp weakly protuberant, dactyl elongate, apical nail weakly distinct, medium.

Gnathopods ordinary, small, similar, wrists elongate, unlobed, without eusirid attachment, palms transverse, hands bell-shaped, poorly setose an-

teriorly. Article 2 of pereopod 5 of broad form, scarcely tapering apically, articles 4–5 of pereopods 5–6 narrow, article 2 not setose posteriorly, pereopod 7 ordinary, article 2 naked ventrally, article 3 ordinary, dactyl normal.

Peduncle of uropod 1 normally elongate, without apical spike, with displaced apicomedial spine, uropods 1–2 without comb, inner ramus of uropod 1 with one row of marginal spines, inner ramus of uropod 2 more or less continuously spinose to apex (with one accessory nail), apical nails well developed and that on inner ramus of uropod 1 flexibly articulate, inner ramus of uropod 2 normal (not fused). Uropod 3 ordinary, bearing article 2 of outer ramus, carrying 2 short apical setae. Telson ordinary, each lobe with 2 apical spines and attendant setule, without other special seta. Epimera 1–2 bearing sparse short posterior setules, without midfacial setae above ventral facial ridge, epimeron 3 ordinary and bearing 3 or more long setae in adult. Urosomite 1 without large lateral armament, bearing one or more large bundles of ventral setae, urosomite 3 without hook or special process.

Description.—Rostrum fully developed but weakly constricted. Pubescence and calceoli on male antennae [unknown]. Prebuccal parts ordinary. Right lacinia mobilis bifid or multitoothed, article 1 of mandibular palp short, palp thin, apex of article 3 oblique, article 2 without outer setae. Lower lip bearing cones. Outer plate of maxilla 1 with 11 spines, one spine especially thickened. Inner plates of maxillipeds with 3 main spines, ordinarily setose. Coxae 2–4 without special anterodorsal humps. Posterior spines on article 6 of pereopods 3–4 thick and stiff, midapical seta present; article 2 of pereopod 7 without facial setae. Peduncle of uropod 1 with dorsolateral spines widely spread, medial spines widely spread; peduncle of uropod 2 with only one medial spine confined apically; peduncle of uropod 3 lacking extra subapical setae or spines. Telson with one or more apical spines plus one disjunct subapical spine on each lobe plus attendant setules.

Etymology.—From “*Phoxocephalus*,” the type-genus of the family and “orgyia,” Greek for fathom, modified so as to simplify. Feminine.

Type-species.—*Parharpinia sinuata* K. H. Barnard, 1932.

Composition.—Unique.

Relationship.—This genus is very close to *Parharpinia* Stebbing from Australia (see Barnard and Drummond, 1978). It resembles that genus in broad generalities of uropod 1, especially the diverse pattern of spination, and in the presence of 3 main spines on the inner plate of the maxilliped. There are many other similarities such as extreme antennal spination, slight taper to article 2 of pereopod 5 (strong in *Parharpinia*, barely discernible in *Phoxorgia*), presence of at least remnants of accessory apical spination on uropods 1–2, extra telsonic spination (dorsal in *Parharpinia*, marginal in *Phoxorgia*) and generalities of head, mandible, and uropod 3.

Phoxorgia differs from *Parharpinia* in the apical shift of setae on article

2 of antenna 1 (characteristic of juveniles in *Parharpinia*), the lack of true dorsal spines on the telson, the absence of ventral setae on article 2 of pereopod 7, and the poor posterior setation on epimera 1–2. These may ultimately not be adequate to segregate *Phoxorgia* but for the moment can be correlated with geography.

Phoxorgia appears to be a very good plesiomorph both to *Parharpinia* and *Metharpinia*, the latter an American genus already revised by J. L. Barnard (1980). *Phoxorgia* is plesiomorphic to both genera because of the absence of dorsal telsonic spines, plesiomorphic to *Parharpinia* in addition because of almost normal pereopod 5, and poor epimeral and pereopod 7 setation. It is plesiomorphic to *Metharpinia* which differs from *Phoxorgia* in the strongly reduced rostrum, widely spread ventral setation on article 2 of antenna 1, reduction of main spination on inner plate of maxilliped (from 3 down to 2 or 1), and the loss of true apical nails, only the accessories remaining. The connection to *Microphoxus* through *Metharpinia* can be determined in Barnard (1980).

Phoxorgia shares with *Fuegiphoxus* the odd position of setae on article 2 of antenna 1 but otherwise differs in numerous characters from *Fuegiphoxus*, as follows: (1) stronger spination on article 4 of antenna 2; (2) stronger and more even spination on mandibular molars; (3) presence of 3 (not 1) spines on inner plate of maxilliped; (4) displaced spine of uropod 1; and (5) well developed apical and accessory apical spines on the rami of uropods 1–2. *Fuegiphoxus* therefore appears to be apomorphic to *Phoxorgia* and is actually in the Brolginae.

Phoxorgia sinuata is very close to *Foxiphalus* but differs from an undescribed species (here called species S which will be described in a later paper) in the following ways: (1) slightly constricted and highly flattened head; (2) shortened article 2 of antenna 1 with the setae shifted apicad; (3) presence of more than 2 facial setae on article 3 of antenna 2; (4) flabellate and subbifid distal branch of the right lacinia mobilis; (5) presence of more than one apical spine on the inner plate of the maxillipeds; and (6) the presence of an accessory apical nail on the inner ramus of uropod 1.

Phoxorgia sinuata (K. H. Barnard)

Fig. 7

Parharpinia villosa, Schellenberg, 1931:75–78, fig. 39 (not Haswell, 1879); 1935:232.

Parharpinia sinuata K. H. Barnard, 1932:103–104, fig. 52.

Paraphoxus sinuatus, J. L. Barnard, 1958:147–148; 1960:278–282, pl. 45.

Description of female “v.”—Head very flat, about 22 percent of total body length, greatest width about 72 percent of length, rostrum slightly constricted near eyes, then continuing broad but tapering, short, reaching

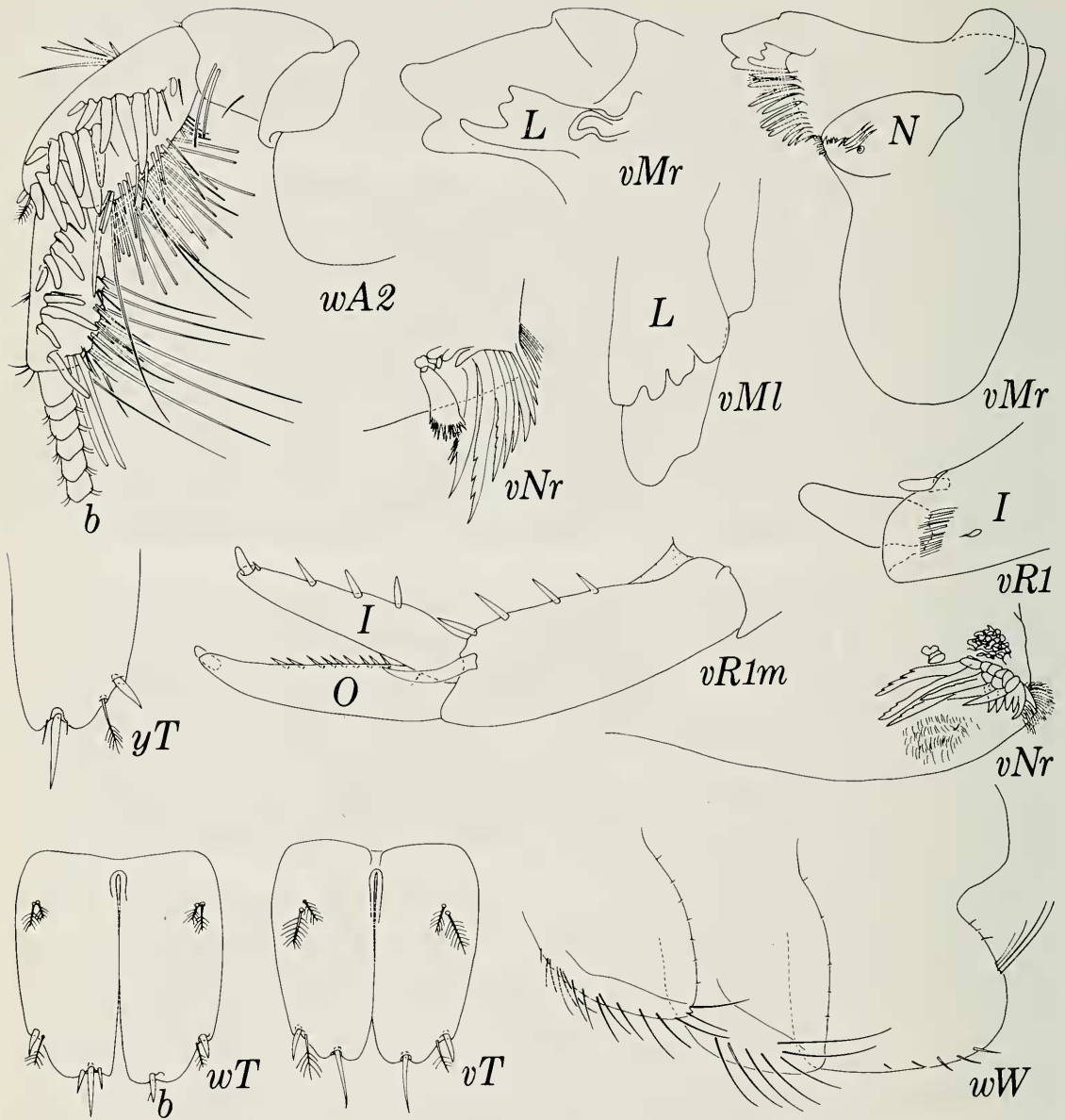


Fig. 7. *Phoxorgia sinuata*: v = female "v" 10.5 mm; w = female "w" 18.1 mm; y = male "y" 10.3 mm.

apex of article 2 on antenna 1. Eyes medium, clear of pigment, ommatidia ordinary. Article 1 of peduncle on antenna 1 about 1.4 times as long as wide, about twice as wide as article 2, ventral margin with about 14+ setules, weakly produced dorsal apex with 2 setules, article 2 about 0.5 times as long as article 1, with apicoventral cycle of 9 setae and 8+ lateral setae at apex, primary flagellum with 15 articles, about 1.2 times as long as peduncle, bearing one short aesthetasc each on articles 8-12, accessory flagellum with 11 articles. Antenna 2 not ensiform though article 1 very large, article 3 with 3 lateral setae, spine formula of article 4 = 1-3-6-5-1 or 1-3-5-5-1, dorsal

margin with weak notch bearing 3 setae, and 2 spines, ventral margin with 5 groups of 3–5 long to medium setae, one ventrodistal long spine, article 5 about 0.8 times as long as article 4, facial spine formula = 3-4, dorsal margin bearing 2 sets of small setae, ventral margin with 4 sets of 1–2 long to medium setae, 3 ventrodistal long to medium spines, one of these strongly facial; flagellum about 1.5 times as long as articles 4–5 of peduncle combined, with 16 articles.

Epistome bulbous anteriorly, fused with upper lip. Mandibles with medium palpar hump, right incisor with 3 teeth, left incisor with 3 humps in 2 branches, right lacinia mobilis bifid, distal branch much shorter than proximal, distal branch broad, subbifid, proximal branch simple, blunt, left lacinia mobilis with 4 teeth, right rakers 10 plus one rudimentary, left rakers 9+, molars composed of elongate bulbous protrusions, right molar with 6 long spines, 6 short teeth, plus one ragged spine weakly disjunct, left molar with 6 long spines, plus 4 short teeth plus ragged spine weakly disjunct, each molar with plume, palp article 1 short, article 2 with one medium inner apical seta and 3 other shorter inner setae and one outer seta, article 3 about 1.1 times as long as article 2, oblique apex with 9 spine-setae, basofacial formula = 1-2. Each outer lobe of lower lip with one cone. Inner plate of maxilla 1 ordinary, bearing one long apical pluseta, one similar apicomедial seta, 2 apicolateral much shorter setae, outer plate with 11 spines, palp article 2 with 2 apical setal-spines, 2 medial setal spines, one apicolateral and 4 medial marginal setae. Inner plates of maxilla 2 scarcely shorter than outer, outer not broader than inner, outer with 6 apicolateral setae, inner with 2 medial setae. Inner plate of maxilliped with 3 large thick apical spines, 2 apicofacial setae, 6 medial setae, outer plate with 11 medial spines, 6 apicolateral setae, palp article 1 without apicolateral seta, article 2 with one apicolateral seta, medial margin of article 2 moderately to weakly setose, article 3 with 10 slightly strewn facial setae, 3 lateral setae in clump, nail of article 4 mostly fused but short and internally visible, with 2 accessory setules.

Coxa 1 expanded apically, anterior margin weakly convex or sinuous, main ventral setae of coxae 1–4 = 7-6-6-4, posteriormost seta of coxae 1–3 very short, anterior and posterior margins of coxa 4 weakly divergent, posterior margin almost straight, posterodorsal corner rounded, posterodorsal margin, ordinary, concave, width-length ratio of coxa 4 = 14:17. Gnathopods generally ordinary, width ratios on articles 5–6 of gnathopods 1–2 = 22:33 and 25:34, length ratios = 66:60 and 60:58, palmar humps ordinary, palms weakly oblique, article 5 of gnathopod 1 elongate, ovate, posterior margin flat, long, article 5 of gnathopod 2 ovate, posterior margin rounded, short.

Pereopods 3–4 similar to each other, facial setae formula on article 4 = 4 and 3, parallel to apex, on article 5 = 4 and 5, main spine of article 5

extending to M. 100 on article 6, article 5 with 3 and 2 proximoposterior spines, spine formula of article 6 = 4 + 5 and 4 + 5 plus strong middistal seta (like *Foxiphalus*, not *Fuegiphoxus*), some spines long, acclivity on inner margin of dactyls of pereopods 3-4 weak, subsharp, produced as tooth, emergent setule almost fully immersed, midfacial pluseta ordinary but highly anteriad. Coxae 5-7 posteroventral seta formula = 3-3-7. Articles 4-5 of pereopods 5-6 narrow, facial spine rows sparse, facial ridge formula of article 2 on pereopods 5-7 = 0-1-1. Width ratios of articles 2, 4, 5, 6 of pereopod 5 = 48:30:26:15, of pereopod 6 = 78:35:28:15, of pereopod 7 = 96:23:22:12, length ratios of pereopod 5 = 83:36:41:52, of pereopod 6 = 97:67:59:81, of pereopod 7 = 100:30:32:43. Article 2 of pereopod 7 not reaching middle of article 4, posterior margin with 10 small serrations, medial apex of article 6 finely combed, bearing 6 digital processes.

Posteroventral corner of epimeron 1 quadrate, posterior margin straight, with 2 setules, corner with long seta, anteroventral margin with 6 short to medium setae, ventral margin with one long seta. Epimera 1-2 with lateral ridge. Posteroventral corner of epimeron 2 rounded-quadrate, posterior margin straight, with 2 setules, facial setae = 6, posteriormost pair set vertically and positioned above tangent of others, posteroventral corner of epimeron 3 broadly rounded, then with 4 crowded setae at ventral end of straight posterior margin, above with one setule notch, ventral margin with 4 short setal spines widely spread.

Urosomite 1 with lateral spinule at base of uropod 1 and midventral setal brush, articulation line almost complete, urosomites unprotuberant dorsally. Rami of uropods 1-2 with articulate but tightly fixed apical nails, except inner ramus of uropod 1 with flexible nail, plus accessory nail, spines on outer rami small and numerous and extending almost to apex, outer ramus of uropod 1 with 11 dorsal spines, inner with 3 large spines, outer ramus of uropod 2 with 6 dorsal spines, inner with 2 large dorsomedial spines, peduncle of uropod 1 with 3 widely spread basofacial spinules, 9 packed apicolateral spines, medially with 4 thin marginal spines and apical displaced enlarged spine, peduncle of uropod 2 with 8 dorsal spines, basalmost short, medially with one medium apical spine, apicolateral corners of peduncles on uropods 1-2 without comb. Peduncle of uropod 3 with 8 ventral spines, dorsally with one lateral spine, one medial spine, rami submasculine, inner extending to M. 75 on article 1 of outer ramus, apex with 2 setae, medial and lateral margins with 6 and one setae, article 2 of outer ramus ordinary, 0.23, bearing 2 short to medium setae, medial margin of article 1 with 3 setae, lateral margin with 4 acclivities, spine formula = 2-2-2-2-2, setal formula = 0-0-0-0-1. Telson ordinary, length-width ratio = almost 1:1, almost fully cleft, each apex wide, rounded, but incised apically, lateral acclivity narrow, weak, bearing short lateral spine, setule next medial of length equal

to spine, medial spine in terminal incision, midlateral setules diverse, larger of medium size.

Male "y" (not fully terminal).—Eyes not enlarged. Article 1 of antenna 1 with 12 ventral setules, article 2 with 8 anteroventral setae and 5 apicolateral setae, primary flagellum with 17 articles, accessory with 11, calceoli absent, aesthetascs weakly developed, pubescence on antennae absent. Facial spine formula on article 4 of antenna 2 = 1-3-5-5-1, on article 5 = 3-4, with no dorsal sets of male setae and calceoli, ventrodiscal apex with 3 thick spines; flagellum weakly proliferate, with 18 articles. Basofacial setal formula of article 3 on mandibular palp = 1-3 or 1-2. Article 2 of only pereopod 7 slightly narrower than in female. Epimera 1-3 not broadened, posterior margin of epimeron 3 not shortened, setal formulas: epimeron 1 anteroventral = 5, facioventral = 3, then large gap to posterior corner = 1, epimeron 2 facial = 7 (2 posterior = vertical), epimeron 3 posterior = 4, ventral = 3. Spine formulas of uropods: uropod 1 peduncle apicolateral = 9, basofacial = 2, uropod 2 peduncle dorsal = 9, dorsal spines on outer ramus of uropod 1 = 12, of uropod 2 = 6, inner ramus of uropod 1 = 4 + 1 accessory nail, of uropod 2 = 2, ventral spines on peduncle of uropod 3 = 7, inner ramus extending to M. 90 on article 1 of outer ramus, well setose, spine formula on article 1 of outer ramus = 1-2-2-2-2, setal formula = 0-0-0-0-1; telson like female, distal spines not shortened. Apical spine guarded by 2 setules (figured), no denticle rows.

Female "w" giant.—See illustration of antenna 2 noting flagellum slightly proliferate as in males. Epimera 1-3 illustrated, noting epimeron 1 posteroventral corner slightly produced into 2 cusps. Armament formulas, uropod 1 basofacial peduncle = 4 in long string, peduncle apicolateral = 15 (covering almost half of margin), outer ramus = 17, inner ramus = 5 + one accessory apical nail; uropod 2 peduncle dorsal = 14, outer ramus = 11, inner ramus = 3; uropod 3 peduncle ventral = 9, article 1 outer ramus spines = 1-2-2-2-2-2, setae = 0-0-0-0-0-1, medial margin of article 1 on outer ramus on both margins of inner ramus strongly setose, article 2 on outer ramus = 0.14. Telson illustrated.

Juvenile "k."—Ventrodiscal setae of article 2 on antenna 1 = 4. Setae on article 3 of antenna 2 = one long, one short only, spine formula on article 4 = 1-3-4-3, on article 5 = 2 only. Right lacinia mobilis similar to adult, right molar with 7 main spines and one disjunct, basal setal formula on palp article 3 = 0-0. Spine formula on inner plate of maxilliped = 3 (like adult). Epimeron 1 with 3 anteroventral setae, no others. Epimeron 2 with 4 facial setae, posterior pair of facials slightly disjunct and obliquely set. Epimeron 3 with one ventral and 2 posterior setae. Spine formulas: uropod 1 peduncle apicolateral = 3, outer ramus = 4, inner ramus = 2, on latter accessory nail rudimentary, only socket truly present; uropod 3 dorsal peduncle = 3, outer

ramus = 2, inner ramus = 1; uropod 3 outer ramus article 1 spines = 1-2, setae = 0-0-0, article 2 about 0.45!!, inner ramus extending to M. 55 on article 1 of outer ramus, with only one apical seta.

Material.—Swedish Museum of Natural History 2722, Bahia Inutil, 20–30 Fd., 23/1/96 (11 specimens, including male “y” 10.3 mm and female “v” 10.5 mm); 3640, W. Feuerland, 54°43’S, 64°08’W, 6/1/02, 36 m, pebbles and gravel, senile female “w” 18.1 mm; 3631, juvenile “k” 5.18 mm; 2728, Bahia Inutil, 11–5 fms, 23/1/96 (1); 3639, Punta Arenas, 7–8 fms, 4/12/95 (juvenile); 2741, Isla Nueva, 30 fms, 7/2/96 (15); 591, Valparaiso, 6–8 fms, several but others in sample not this genus. Smithsonian Institution: *Albatross* 2776, Straits of Magellan, 52°41’00”S, 69°55’30”W, 21 fms, 18 January 1888, water surface temperature 51 F (1).

Distribution.—Valparaiso, Chile through Magellanic Archipelago to South Georgia, 4–159 m.

Literature Cited

- Barnard, J. L. 1958. Revisionary notes on the Phoxocephalidae (Amphipoda), with a key to the genera.—*Pacific Science* 12:146–151.
- . 1960. The amphipod family Phoxocephalidae in the Eastern Pacific Ocean, with analyses of other species and notes for a revision of the Family.—*Allan Hancock Pacific Expeditions* 18:175–368, pls. 1–75, 1 chart.
- . 1979. Revision of American species of the marine amphipod genus *Paraphoxus* (Gammaridea: Phoxocephalidae).—*Proceedings of the Biological Society of Washington* 92:368–379.
- , and M. M. Drummond. 1976. Clarification of five genera of Phoxocephalidae (Marine Amphipoda).—*Proceedings of the Biological Society of Washington* 88:515–547, figs. 1–4.
- , and ———. 1978. Gammaridean amphipoda of Australia, part III.—*Smithsonian Contributions to Zoology* 245:1–555, figs. 1–269.
- Barnard, K. H. 1932. Amphipoda.—*Discovery Reports* 5:1–326, plate 1, figs. 1–174.
- Chevreaux, E. 1912. Diagnoses d’amphipodes nouveaux.—*Deuxième Expédition dans l’Antarctique, dirigée par le Dr. Charcot, 1908–1910.*—*Bulletin du Muséum d’Histoire Naturelle, Paris* 18:208–218.
- . 1913. Amphipodes.—*Deuxième Expédition Antarctique Française (1908–1910) commandée par le Dr. Jean Charcot. Sciences Naturelles: Documents Scientifiques*:79–186, figs. 1–62.
- Haswell, W. A. 1879. On Australian Amphipoda.—*Proceedings of the Linnean Society of New South Wales* 4:245–279, pls. 7–12.
- Schellenberg, A. 1931. Gammariden und Caprelliden des Magellangebietes, Südgeorgiens und der Westantarktis.—*Further Zoological Results of the Swedish Antarctic Expedition 1901–1903*, 2(6):1–290, plate 1, figs. 1–136.
- . 1935. Amphipoden von Chile und Juan Fernandez, gesammelt von Prof. W. Goetsch.—*Zoologische Jahrbücher, Systematik*, 67:225–234, 3 text figures.
- Stephensen, K. 1949. The Amphipoda of Tristan da Cunha.—*Results of the Norwegian Scientific Expedition to Tristan da Cunha 1937–1938*, 19:1–61, 23 text figures.

Department of Invertebrate Zoology, Smithsonian Institution, Washington, DC 20560, USA.